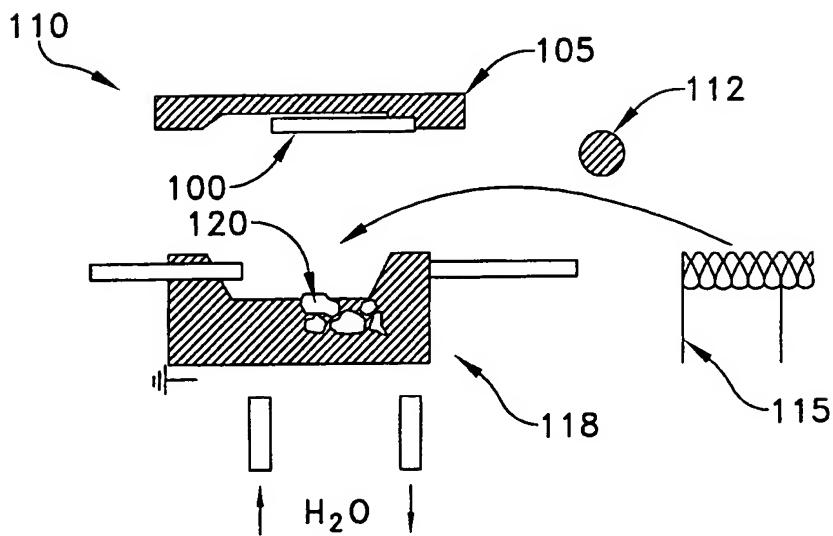


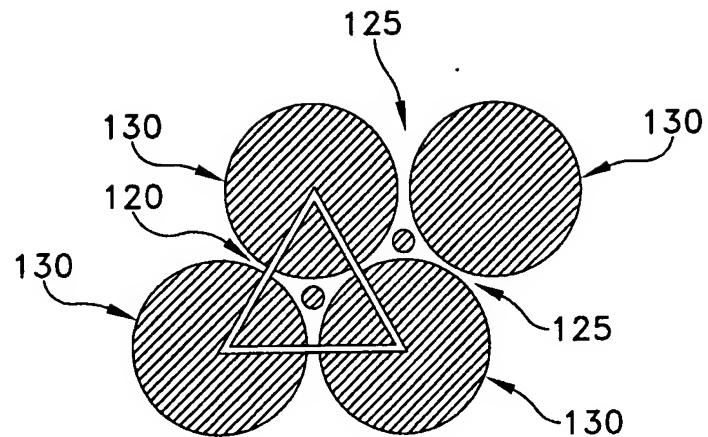
Spheres are arranged in nearly perfect crystal order.

FIG. 2



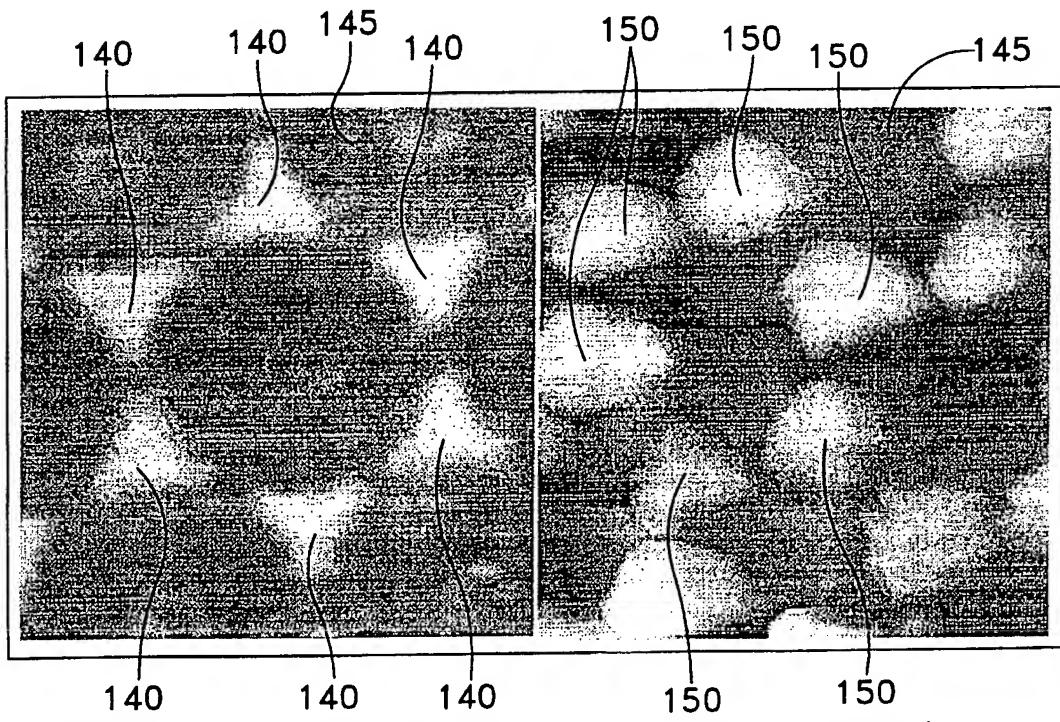
Electron beam evaporation of nickel onto the prepared substrate

FIG. 3



Deposition through the interstitial spaces  
results in triangular shaped deposits on the surface

FIG. 4

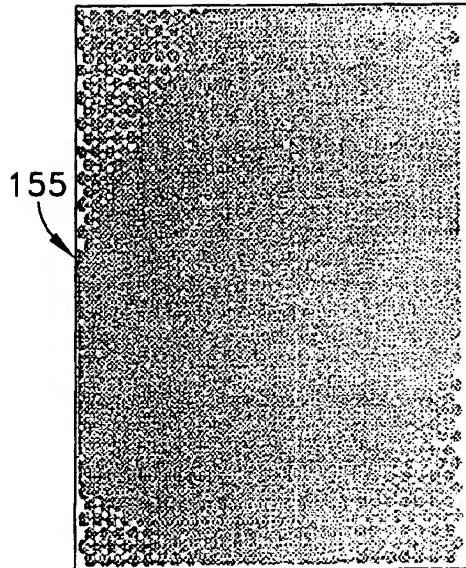


After coating and removal  
of the sphere mask,  
an array of deposited  
triangles is exposed.

FIG. 5A

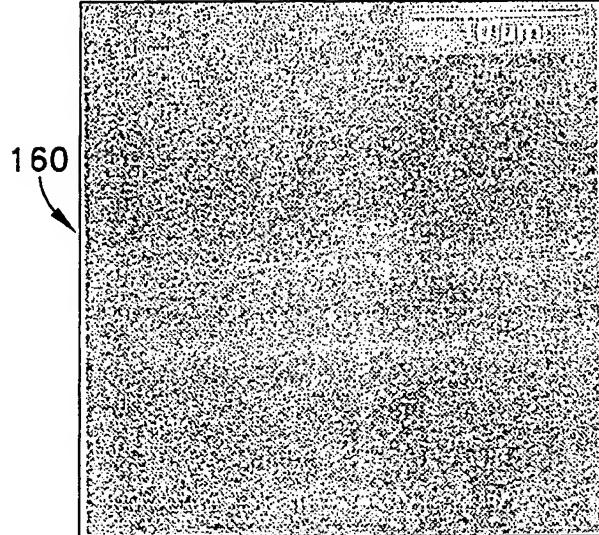
After a thermal  
anneal at 800C,  
the particles become  
more spherical.

FIG. 5B



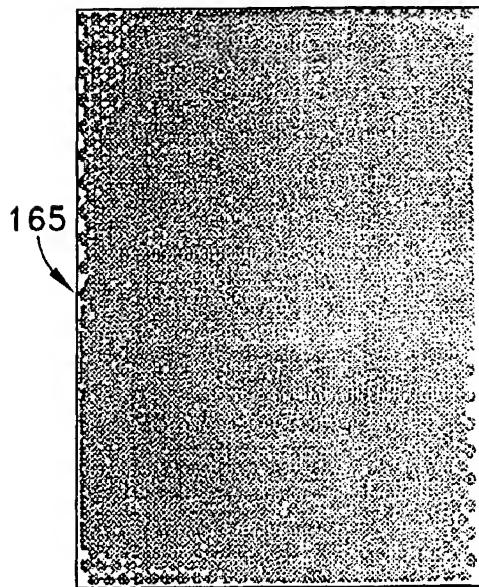
Schematically represents the pattern generated by two monolayers offset by 30 degrees.

FIG. 6A



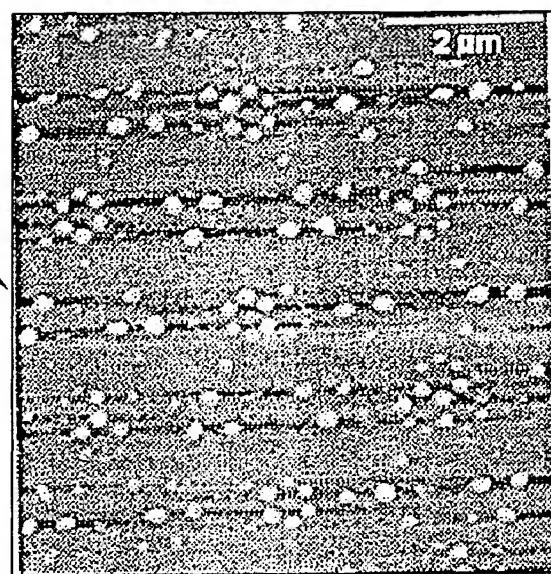
A Microscopy image of such an array fabricated with the disclosed method.

FIG. 6B



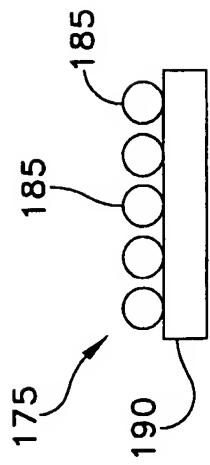
Schematically represents the pattern generated by two monolayers offset by 10 degrees.

FIG. 7A



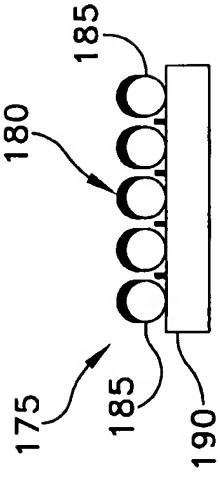
A Microscopy image of such an array fabricated with the disclosed method.

FIG. 7B



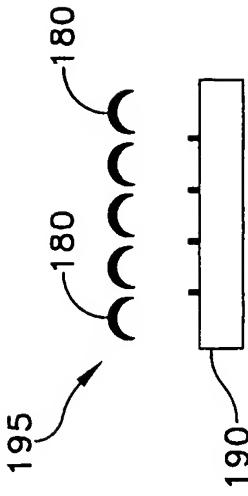
A schematic representation  
of an array of spheres  
on a surface.

FIG. 8A



Represents a coating atop  
the spheres, which leaves  
deposits in the interstices  
between spheres.

FIG. 8B



Shows the effect of dissolution  
of the spheres, and the resulting  
freestanding mask with holes plus the  
substrate with its corresponding deposits.

FIG. 8C